CLAIMS

What is claimed is:

1. An isolated proteoglycan which is derived from a water extract of cartilage of cartilaginous fish and whose main component has a molecular weight of 500 kDa or more.

2. The proteoglycan of Claim 1, wherein it is insoluble in an alcohol.

3. The proteoglycan of Claim 1 or 2, wherein it has a glycosaminoglycan part mainly composed of chondroitin sulfate C.

4. The proteoglycan of any one of Claims 1 to 3, wherein it has a matrix metalloprotease-inhibiting activity.

5. The proteoglycan of Claim 4, wherein the matrix metalloprotease is MMP-9, and the inhibiting activity is an effect of canceling a reduction in an MMP-9-inhibiting activity in the blood serum of a tumor-bearing animal fed on a 0.4% by weight-product-containing feed or an effect of increasing, by at least 5%, an MMP-9-inhibiting activity in the blood serum of a tumor-bearing animal fed on a 0.4% by weight-product-containing feed.

6. The proteoglycan of any one of Claims 1 to 5, wherein it has an effect of increasing a cathepsin B-inhibiting activity when taken in an effective amount into a living body.

7. The proteoglycan of any one of Claims 1 to 6, wherein it has an activity of increasing the amount of haptoglobin in blood serum when taken in an effective amount into a living body.

8. A composition comprising the proteoglycan of any one of Claims 1 to 7.

9. The composition of Claim 8, wherein it is for use in an improvement in quality of life.

10. A pharmaceutical composition, comprising the proteoglycan of any one of Claims 1 to 7 as an active ingredient.

11. A method of producing the proteoglycan of any one of Claims 1 to 7, comprising the steps of:

pulverizing cartilaginous fish-derived cartilage into a pulverized product with an average particle diameter of 100 μm or less;

adding water to the pulverized product and extracting water-soluble components from it;

separating an aqueous phase that contains the extracted water-soluble components; and

adding an alcohol to the aqueous phase to produce a precipitate.